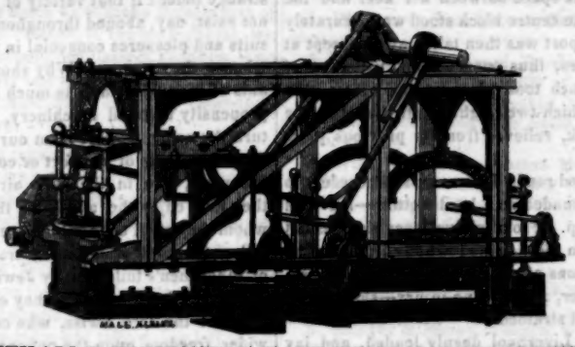
NEW YORK STATE MECHANIC.

Under the Direction of the New York State Mechanic Association.

VOL. I.—No. 38. ALBANY, AUG. 13, 1842. PART II.—No. 12.



LIGHTHALL'S HORIZONTAL HALF BEAM MARINE ENGINE.

STEAM TUG MUTUAL SAFETY.

The Mutual Safety was built by William H. Brown for the purpose of towing vessels, not merely in and about the harbor of New York, but being capable of carrying from ten to fifteen days' fuel, is in that, and in other respects, well adapted for coast navigation; or if necessary, even to cross the ocean. In the opinion of her present engineer, William Ferrel, she is as sea worthy a vessel as either of those lately built by Messrs. Bell & Brown for the Mexican government; one of which Mr. Ferrel took out; and from her plan of engine, length of stroke and diameter of wheel, would greatly surpass either of them in speed. The merits of the Mutual Safety as a steamer were fairly tested while assisting in geting afloat the packet ship Louis Phillipe, recently ashore on the south side of Long Island.

She is 170 feet keel, 26 feet beam, 10 feet hold, and draws 6 feet water with ten days' fuel on board. She has great stability for her breadth of beam, which is owing in a great measure to the position of her machinery, her boiler being below deck, and also in her hold one of Mr Lighthall's horizontal half beam engines, combining most of his recent improvements. She has a 44 inch cylinder, 10 feet stroke, diameter of wheel 29 feet, with 7 feet face, and dips, when the buckets are not reefed, 26 inches. The great advantage of a large and narrow wheel is clearly shown in the regularity of each revolution, and the evident ease with which the engine works, making in a sea way 21 turns with about 18 or 20 lbs. of steam.

The engine was built by Secor & Co., and rates at about 130 horse power. It occupies in width rather less than six feet including the frame at its base, and about 35 feet in length, diminishing to 4 feet in width, as it rises to the deck beams, all of which are left entire except the space allowed for the connecting rod to work through, which adds much to the strength of the vessel at the point where it is essentially necessary that she should be strong, and where with other kinds of engines the hull of the vessel is necessarily the weakest: with the English plan of engine *all* the main deck timbers have to be cut away.

Mr. Lighthall's arrangement of the side pipes and steam chests below the cylinder, is of great moment, for it obviates entirely the danger to the cylinder ends, from the foaming of the boiler and the working over of water which is of frequent occurrence even in inland navigation; but much more liable to occur when the water in the boiler becomes disturbed and agitated by the rolling and pitching of the vessel at sea. But by having the openings from the cylinder below instead of above, the cylinder frees itself at each half stroke without the possibility of injury from that source, and would do so, if working even as a water engine.

In vessels intended to navigate the ocean, all the machinery must be proportionably stronger, which of course increases the weight of material, and more especially that of the moving parts. The only practical mode of obviating the increased friction resulting therefrom would seem to be that adopted in the horizontal, half or whole beam engine, letting the cylinder and slides bear the weight of the piston and piston rod, and hanging the other weighty parts upon their respective centres. Thus the pendulous half beam not only sustains itself, but likewise bears the weight of the shackle bar or connecting rod, together with the air pump piston, and rod, thus relieving the gibs and slides of an immense amount of friction. In fact the friction upon the slides as well as that of the piston upon the cylinder in this form of engine, is found from experience to be, comparatively speaking nothing. Unconnected from the beam, the power of three men can run the unpacked piston through the cylinder, and without a particle of steam the engine has been known to make two or three turns while lying at the wharf, upon a mere vacuum, the boilers blown out and the men within cleaning them.

The wood cut gives a tolerably accurate idea of the rotative position of the cylinder, side pipes, steam chest, condenser, bed plate and air pumps. To effect this, the keelsons upon which the cylinder rests are not shewn. The frame of the Mutual Safety's engine is in principle the same as that represented in the cut, differing only in height; her depth of hold not requiring so elevated a position for the shaft. Her frame is about as high as the main centre of the half beam, which gives additional strength and effect to the diagonal brace upon which is thrown the principal strain of the engine while at work. The exhaust pipe, condenser, air pumps, &c., are compactly arranged between the two keelsons, in line with the cylinder, and the only further condensation of parts contemplated by Mr. Lighthall is that of placing the steam chests directly against the cylinder head, making in fact the steam chests and cylinder heads in one casting. The additional saving in space is not of so much importance as the greater economy or saving of steam; for by thus opening directly through the cylinder ends, the nozzles are dispensed with, and in an engine of 130 horse power four cubic feet of steam is saved, equal to the power of 4 horses at each revolution. This last improvement, in connection with the mode of working the steam valves as "cut offs" (as recently perfected by Mr. Hogg of the Phœnix Foundry) would appear to be the *Ultima Thule*, the *ne plus ultra* of economy in working steam expansively.

In the English engines the slide valves are preferred on account of the waste of steam in the nozzles, but independent of the immense friction of the slide valve requiring the power of 15 to 20 men to start their engines, it is impracticable with the slide valve to get openings sufficiently large. To work steam expansively, with the greatest advantage, we must have big openings and a rapid motion of the valve. When the cylinder is ready for the steam, the quicker it gets it the better.

The hull of the Mutual Safety is of course much more substantially built and fastened, than if intended merely to tow vessels about the harbor, which together with the longitudinal direction in which the engine works, throwing all the strain fore and aft in the direction of her greatest strength of hull, and the mechanical adaptation of the frame. Though the sound of the bucket on the water is heard, yet no vibration whatever is felt in the hull of the vessel. Even the shaft pillow blocks, which are the first to move, stand as solid while the engine is at work, as though they were part and parcel of the keel.

Taken all together the Mutual Safety is a "highly creditable specimen of an American steamer" on a small scale, and with very little additional rigging, and some slight alterations in her deck arrangements, would be the most efficient if not the most economical character of vessel for our revenue service, either on the sea board or the lakes; and for the latter service, as an armed steamer, would be preferable to any class of vessel that could be selected.

THE ANNESLEY SYSTEM OF NAVAL ARCHITECTURE.

The article on "Ships of Wood and Iron," republished in your paper of the 16th ult. from the Civil Engineers' and Architects' Journal, is evidently the production of a practical as well as philosophical mind, and its suggestions are made in a spirit of candor free from those illiberal prejudices which are too apt to pervade contributions to scientific journals, even when their authors profess to be engaged in weighing fairly the merits of rival systems. I was much gratified with the views of the author of that article, and with what seemed to be its implied rebuke of that spirit of jealousy against innovation which self styled practical men almost always exhibit towards any suggestions of improvement in or about their respective departments of art. I speak of that spirit which prefers the course of advance by slow steps of minute and imitative improvements, scarcely differing from the imitated model, to that of rapid progress by means suggested through philosophical research and observation. That spirit whilst it may in some degree operate to check wild and ruinous schemes, projected by ignorant but bold visionaries, is a serious draw back upon the energetic operations of those who, perchance, without technical knowledge of an art, yet, building their plans upon the sure foundation of the laws of nature, controled by philosophical wisdom, are confident in the practicability of their schemes, and therefore do not hesi-

tate at great innovations, which, whilst they shock the prejudices of the ignorant, advance science and art by gigantic strides.

The painter, Fulton, was probably little acquainted with the technicalities of the construction, or with the formularies for ascertaining the power of the steam engine, and as little with the practical details of ship building when he first conceived and invented that combination of both, that has made his name so memorable; yet, superior to the sneers, ridicule and opposition of *practical men* and the *wise world* around him, he persevered until success crowned his efforts.

Smeaton took a long stride in advance of the age, and encountered the scoffs of the experienced and practical men of his day, when with true philosophic energy he built the Bridgewater canal, in the face of predictions that discomfiture and ruin would be his fate, and of his noble patron. Long would it have been before the world would have been benefitted by the talents of such men, if the counsels of those had prevailed who make long experience and practice the rule of conduct for all enterprise.

These thoughts are naturally suggested by the subject matter of this paper; since, although the system of which it is intended to give an account, has been tested so thoroughly as to furnish positive demonstration of its superiority in many respects over the ordinary mode of ship building, yet the strong prejudices of those whose best interests would be served by its adoption, have as yet kept them aloof from a practical investigation of its value. It is to be feared that it will be left, as in the case of ocean steam navigation, to be first employed by our trans-Atlantic brethren, who are already availing themselves of some partial application of its principles.

I propose to furnish, in the following pages, an account of the rise and progress of the system—a history of the vessels built for me under my own eye—draw a comparison between timber and plank vessels, and close with thoughts upon the importance of the system to the maritime interests of the country.

Mr. William Annesley, of the city of Albany, then pursuing the business of carver and gilder, having occasion in the year 1811 for a small sailing vessel, undertook the building of one himself, and in doing it to make experiment of a simpler and cheaper mode of construction than that usually employed. He accordingly set up a keelson, stem, sternport with transom, and on the keelson a set of *temporary* ribs or arches (called moulds) made of inch boards, which arches corresponded in form with the ordinary timbers of a vessel. Over these arches, and terminating upon the stem, sternport and transom, he bent white pine plank ¾ of an inch thick, these were slightly fastened to the arches. Next, over this first course, at right angles to it, a course of white wood of ¼ an inch thick was bent, each end terminating in the gunwale of the boat. Over this again a course of pine, similar to the first, was put, and thick tarred paper having been interposed between the courses, the whole was closely nailed together, and the nails clinched on the inside. The moulds were then withdrawn and the boat decked. This was then a structure of 33 feet long, 11 wide, and 4½ deep, built of three courses, two fore and aft, and one transverse—of two and a half inches entire thickness. It proved to be of much greater strength than was anticipated, and being employed for some time as an oyster boat, was found to possess, with equal strength, greater lightness and buoyancy than vessels of its class.

The success of this first experiment was so satisfactory that Mr. A. soon afterwards built a second boat, which succeeded as well as the first, and satisfied him that this mode of construction might, with some slight modifications, be employed in building large vessels.

In the year 1817, being called by business to Great Britain, and compelled to spend some time there, he availed himself of a favorable opportunity to build, at Belfast, a schooner of some size.

Her extreme length was 49 feet, her width 15 feet 8 inches, depth 8 feet, measurement 45 tons. She was built of 5 courses of oak, 3 of them ¾ inch thick, and two transverse ¾ inch thick. Her entire thickness was 3¾ inches.

When completed, the following trial was made of her strength. The space between her keel and the plank on which the centre block stood was accurately measured, all support was then taken away except at the two extremeties; thus suspended a variation of only 7-16 of an inch took place at the centre—the greater part of which two might be attributed to the rising of the plank, relieved from its previous pressure.

She was launched ready for sea and proceeded to Bangor, there grounded on a hard bottom—her keel was 16 inches deep. From inadvertency she was not secured, and when the tide had wholly left her she fell over with 14 tons of cast iron ballast on board. Her bilge, however, received no injury—she did not appear to be at all strained.

She arrived at Liverpool deeply loaded, and lay aground outside the dock for the purpose of exhibition, and was in no wise strained.

After her return, her strength was again accidentally tried in laying her on ways to paint her bottom. On the leaving of the tide she was found suspended by the centre, but exhibited no signs of strain, although some part of her cargo was on board.

She was next chartered in Sept. 1818, for Bordeaux. She had 22 tons of pig lead incautiously piled along the centre of the hold. In a heavy gale in the channel, a sea struck her and threw this body of lead to leeward, which lay her lee comeings under water. In this situation she was wore and the lead replaced more judiciously. The shock of the fall of such a dense weight so violently on her side was a severe test which perhaps few vessels would have stood, but she sustained not the least injury, arrived save, and returned to London deeply laden with a cargo of dried fruit, which was landed in the best condition. She did equally well in a trying winter voyage to St. Michaels out and home.

(To be Continued.)

A PROTECTIVE TARIFF NECESSARY TO NATIONAL INDEPENDENCE.

It is admitted by all that "liberty and the pursuit of happiness" are among the "inalienable rights of man;" and that the liberty and pursuit of happiness so recognised is independence, in the broadest and most acceptable sense of the term, there will none deny. Hence individuals forming a nation combine in one body an inherent and universal right to pursue happiness by electing not only with whom they will have intercourse, but also the terms of such intercourse. They may by the same right buy of or sell to such individuals or nations as shall promote their interest or pleasure, and it is a discussion of the terms upon which we as a nation should hold commercial intercourse with other nations of the earth that makes our subject at this time.

Whatever tends to foster both art and science tends most to elevate the community in which they flourish, by diffusing taste and the capacity of intellectual enjoyments to their highest susceptible attainment. It will therefore be apparent that the more diversified the employments of a people the more tastes can be gratified and the more capacities suited in the selection of their industrial pursuits. The constantly varying curve which Hogarth denominated the line of beauty, illustrates equally well what charms the eye as to forms, and the mind as to variety. Nature never gives a straight line without placing a curve near to relieve it, and the mind turns from monotonous pursuits and contemplations for relief to the next different subject it finds within reach; straight lines and perfect uniformity being beautiful only to those moral antipodes, the military and the quakers.

In a country so widely extended as ours, containing every variety of climate and soil, populated by the sons and daughters of every nation, it would be strange indeed if that variety of taste and talent did not exist, nay, abound throughout it, for all the pursuits and pleasures congenial in those countries from whence they sprung. Why should not the descendants of merry England as much indulge their natural propensity to build machinery, erect vast ships or turn the unsightly ores from our numerous mines into rich articles of comfort or convenience, utility or ornament, here in the pure air of freedom, where they may enjoy the avails of their toils with those whom they shall choose to share it, as to be forced to follow the plow or become a trafficker in the avails of other men's toils and by Jewing a bit from seller and buyer live upon what they each lose? And why may not the free Swiss, who come here to enjoy a wider freedom upon the unbounded expanse of our independent country, turn their talents for ornamenting and refining the thousand of those little conveniences which gratify whilst they lessen the toils and add a charm to the person, the cabinet or the household, which possessing are enriched by them—to beautifying and diversifying the scenery of our country by filling our valleys and water falls with those happy villages which are the admiration of every traveler through picturesque Switzerland?

It is only that variety of study and art which, stimulated and influenced by the magnificent display of American scenery—embracing every variety from the unbroken plain and vast prairies of gentle undulations to the torn and scattered piles of loftiest rock, the silent dell with rippling springs, to wildest gorge with maddened and leaping torrents, on to the accumulated flood of twenty seas climaxing grandeur in its majestic pour, can ever elevate the American people to that eminence of glorious independence, in mind, wealth, resources and influence, which their position among the nations of the earth enables them to assume whenever they shall will it; and that system of government which fosters the greatest variety of pursuits, lays the foundations of the greatest social, moral and political influence, by making its subjects most conversant with the elements of free independence, and therefore furthers the ends of all true governments by securing the largest liberty, and the broadest field for the pursuit of happiness.

While many are fitted by inclination and study to illustrate science and add to the vast stock of rational explanations of the constantly occurring and varied phenomena of matter and life, by showing both cause and effect, others are fitted to turn and adapt such science to the relieving the wants and necessities, as well as ministering to the gratifications or comforts, pleasures and refinements of society; and he that does either, but extends the benefits of civilization and social intercourse, and that community which contains within itself the means of gratifying all its wants, or the largest portion of them, which pleases most tastes in their individual pursuits, which charms with the greatest variety of comforts and elegancies, and gives the readiest means of their attainment, is not only the happiest, most civilized, but the most truly independent.

It seems that nature indicates in the variety of soils, climates, scenery, and productions of our country, more than in any other, that here mankind might be most happy, if they would, by adapting themselves to those pursuits which their tastes incline them to, and to which the country is so peculiarly fitted, and our form of government so well adapted.

Let, then, every variety of interest and taste, pursuit or profession, have that *protection* which it is the object of equitable governments to obtain and maintain—which alone combines society into government, and then ours is the happy land. What such protection is, is the grand question for settlement, and, as no one has a right to be protected at the expense of another, the conflicting interests, if any there be, must mutually concede so much as to make the measure of protection equitable. Hence, if the agricultural, the mechanical and the commercial interests conflict, (and all is comprised under one of these heads,) the question is, how much must each or either concede to equalize the measure.

That our farmers require a tariff of duties upon the produce of foreign soils, to keep the markets of this country to themselves, will require only this illustration, that while labor is in the best grain countries of Europe but about *one eighth* (probably less) of the cost of labor here, the transportation from there is less than from the grain districts of our western states to the Atlantic cities; and that cattle, slaughtered for their hides and tallow, are left to rot upon the plains of Central and South America, from whence ship loads of beef would be brought but for a duty which excludes it; whilst cotton and sugar are produced in the Indies at rates even cheaper than slave labor can do it in these states, transportation hither added.

That commerce requires protection, and has it, is proven by the fact of large armaments being constantly kept, in peace times, upon every sea, with the hosts of *consuls* and *commercial agents* of the government, spread throughout the world, at immense cost to the people of the country, in money, life and toil; added to which must be the expenses incurred in all wars upon commercial account, amounting to more than from any other cause in the present age. And but for commercial intercourse, and consequently its protection, what need of those expensive embarrassments to amicable intercourse and intelligent correspondence with the nations of the earth, the *ministers plenipotentiary* and *charges d' affairs* for which we have to pay such extraordinary sums, and get so terribly excited and combative when one of them outdoes another in mystification or gullibility? But for its protection when would we hear of a Mediteranean, West India, or Home squadron, and when would the country be startled from its propriety by frightful apparitions of "long, low, suspicious looking craft;" "raw heads and bloody bones," and the thousand and one of such horrible apprehensions which the papers living upon the commercial interests, and which swarm in our cities like locusts in Africa, keep constantly "before the people:"—and which interests, much like the locusts, strip every thing within their influence of its tenderest and sweetest produce, leaving, indeed, the tree, but taking the blossom, fruit, and even foliage entire, when not driven off?

Commerce is much better protected than has ever been either agriculture or manufactures, and undoubtedly it is because its friends have been unceasing in forcing its claims before the community, and although foreign commerce is undoubtedly useful as promoting civilization, through all the sources of variety, luxury and elegance which it brings together, yet it requires, like every thing else, greater efforts to publish and sustain it as it goes beyond its proper limits, and in the bloated condition of it for the last few years, it has, like the mountebank and juggler, required all the display of cuts and capitals in tawdry colors to force the public attention to its merits; hence we see it compared with the greater and vital interests of the country, unnaturally thrust into notice, and instead of looking to the merits of all, attention has all been turned towards the one—Lear and Hamlet are thrust aside, whilst we stare at an Ellsler and Gumbo Chaff with strained eyes. T.

(To be continued.)

REGISTER OF PATENTS.

AMERICAN PATENTS ISSUED IN APRIL.

1. William C. Van Hoesen, Catskill, N, Y., for an improvement in the *hay press.*

2. Noadiah N. Hubbard, Randolph, O., for an improvement in the *current water wheel* for mills.

3. Joseph W. Hale, Haverhill, Mass,, for a method of *wetting flannels and other cloths* previous to scouring or milling.

4. William Perkins, Boston Mass., for improvements in the machine for *cutting crackers.*

5. Elias Kaighn, Camden, N. J., for an improvement in the *tuyere for forges.*

6. Shively Stadon, Greenwood, Penn., for a *cattle pump.*

7. Zophar Jayne, M. D., for a mode of *healing reducible hernia.*

8. Munger & Marsh, Auburn, N. Y., for an apparatus for *heating water and steaming vegetables.*

9. Thomas Eltonhead, Baltimore, Md., for an improvement in the *joints of spectacle frames.*

10. Alanson Abbe, Worcester, Mass., for improvements in *corselets for medical purposes.*

11. Job Arnold, Harmony, N. Y., for an improvement in the *cheese press.*

12. Isaac N. Whittlesey, Vincennes, Ia., for improvements in the *rotary steam engine.*

13. Cephas Manning, Acton, Mass., for an improvement in the machine for *cutting staves.*

14. Benjamin F. Greenough, Boston, Mass., for improvements in *lamps* for burning chemical mixtures, or compositions of alcohol, spirits of turpentine, &c.

15. Schermerhorn & Porter, New York, for a machine for *harrowing and planting seed.*

16. John A. Cambell, Lima, N. Y., for an improvement in the *truss* for the cure of Prolapsus Uteri.

17. Sylvanus Fansher, Southbury, Ct., for an improvement in the *window blind fastener.*

18. Samuel Wilkes, Darleston, Eng., for an improvement in the method of *casting hinges.*

19. Henry H. Robbins, Middleborough, Mass., for an improvement in the machine for *pressing straw braid.*

20. Ebenezer Beard, New Sharon, M., for an improvement in the *screw propeller*, for propelling boats, vessels, &c.

21. M. C. Saddler, Brockport, N. Y., for improvements in the *cooking stove.*

22. Ezra L. Miller, Brooklyn, N. Y., for improvements in the machine for *planting corn*, sugar beet, and other seeds.

23. Samuel Goodwin, New York, for a mode of *rendering casts and other articles water and air proof.*

24. George Bradley, Paterson, N. J., for an improvement in the *indicator, or steam gauge*, for ascertaining the pressure of steam in a boiler.

25. John B. Bissell, Otsego, N. Y., for an improvement in the *cooking stove.*

26. Damon A. Church, Friendship, N. Y., for improvements in *saw mill dogs.*

27. Zena K. Murdock, Meriden; Ct., for an improvement in *knife handles.*

28. Nathaniel L. Manning, Boston, Mass., for an improvement in the machine for *cleaning and drying feathers.*

29. Loring Coes, Springfield, Mass., for an improvement in the *screw wrench.*

30. Jesse Reed, Marshfield, Mass., for improvements in the *pump.*

31. William Spencer, Lowell, Mass., for an improvement in the *dyeing machine.*

32. Justin E. Strong, Boston Mass., for an improvement in the manner of constructing the rods of *lightning conductors.*

33. William B. Palmer, Rochester, N. Y., for an improvement in the *smut machine.*

34. Payne & Woodruff, Newark, N. J., for an improvement in the *screen for sifting coal.*

35. A. Ralston Chase, Cincinnati, O., for an improvement in the *seal press.*

36. John D. Prince, Lowell, Mass., for an improved mode of producing a *black color for dyeing.*

37. John M. Van Osdel, Chicago, Ill, for an improvement in the *spring lancet.*

38. Ansel Thayer, Braintree, Mass., for an improvement in *boots and shoes.*

39. Joseph Hurd, Jr., Stoneham, Mass., for a method of *increasing the draught of chimneys.*

40. Squire Whipple, Utica, N. Y., for an improvement in *iron bridges.*

41. James P. McKean, Washington, D. C., for an improvement in the *window fastener.*

42. James Coppuck, Mount Holly, N. J., for an improvement in the *smut machine*, for clearing grain from smut, garlic, &c.

43. Zalman Rice, Lyons, N. Y. for an improvement in the *winnowing machine.*

44. A. McPhetridge, Natchez, Mis., for an improvement in the *saw gin, for ginning cotton.*

45. Daniel Newhall, Lynn, Mass., for an improvement in the apparatus for *destroying canker worms.*

46. Hiram Blanchard, Aquackamonk, N. J., for improvements in the *cooking stove.*

47. John R. St. John, Cleveland, O., for an improvement in *piston rods of steam engines.*

KNOWLEDGE IS POWER.

M. Redelet, in his work, *Sur l'Art de Batir*, gives the following account of an experiment made to test the different amount of force which under different circumstances was necessary to move a block of squared granite weighing 1080 pounds.

In order to move this block along the floor of a roughly chisselled quarry, it required a force equal to 758 lbs.

To draw the same stone over a floor of planks, it required a force equal to 652 lbs.

Placed on a platform of wood, and drawn over the some floor, it required 606 lbs.

By soaping the two surfaces of wood, the requisite force was reduced to 182 lbs.

Placed on rollers of three inches diameter, and a force equal to 34 lbs. was sufficient.

Substituting a wooden for a stone floor, and the requisite force 28 lbs.

With the same rollers on a wooden platform, it required a force equal to 22 lbs. only.

At this point says Mr. Mann, the experiments of Mr. Redelet stopped. But by improvements since effected, in the invention and use of locomotives on railroads, a traction or draught of eight pounds is sufficient to move a ton of 2240 lbs.; so that a force of less than four pounds would now be sufficient to move the granite block of 1080 lbs.—that is, one hundred and eighty-eight times less than was required in the first instance. When therefore, mere animal or muscular force was used to move the body, it required about two-thirds of its own weight to accomplish the object; and by adding the contrivances of *mind* to the strength of *muscle*, the force necessary to move it is reduced more than one hundred and eighty-eight times. Here then is a partnership, in which *mind* contributes one hundred and eighty-eight shares to the stock to one share contributed by *muscle;* or while *brute strength* represents one man, *ingenuity or intelligence* represents one hundred and eighty-eight men!

STEAM POWER IN FRANCE.

We find by a recent statiscal return, that at the end of the last year there were in France 179 establishments having steam power, containing 5,600 boilers, of which 1,889 were for the purpose of heating, and 3,511 for giving motion to machinery. There, were, besides, 2,637 engines, the aggregate force of which was equal to 39,779 horse power. At the same period there were 260 steamboats, being 128 more than in 1838, without comprising those belonging to the State. The number of engines was 400, of a force equalling together 45,000 horse power. The number of passengers conveyed by these vessels was 2,500,000, being 800,000 more than in the preceding year. The increase of merchandise sent by them on freight was equally remarkable, having exceeded by more than 60,000 tons the quantity thus conveyed in 1840. The locomotives employed on the railroads in the departments of Seine, Rhone, Gard, Herauli, and Loire, were in number 118, and in force upwards of 3000 horse power. Of these about 35 were of French manufacture.

SPIFFLICATION.

The following application and subjoined replication recently met our observation; but we've had occupation of the final congratulation since its elaboration, with an earnest application for its immediate publication. Our deliberation on its acceptation met a termination on the aforesaid observation, and its presentation is made without emendation or editorial commendation.—*Ed. Mechanic.*

APPLICATION.

To Miss Moderation:

Most worthy of estimation!
Induced by the reputation
You possess in the nation,
I have a strong inclination
To become your relation;
And if this declaration
Meets your approbation,
I shall make preparation
To remove my situation
To a more convenient station,
To profess my admiration
Of your high qualification.
Now if such oblation,
And this supplication,
Be worthy of observation
And obtain commiseration,
'T will be an aggrandization
Beyond all calculation,
Of the joy and exultation
Of Yours, SANS DISSIMULATION.

REPLICATION.

SIR—I perused your oration
With much deliberation,
And a little consternation,
To see such veneration
On so slight a foundation,
But after examination,
I suppose your animation
Was the fruit of reiteration,
Or had sprung from ostentation
To display your education,
By an odd enumeration,
Or rather multiplication,
Of words of the same termination,
In each respective signification.
Now, without disputation,
Your laborious application
To so tedious an occupation
Is worthy of justification;
And as your imagination
May be of some duration,
And my attempt at imitation
A sufficient gratification,
And a due acceptation,
I am, without affectation,
Yours, MARY MODERATION.

CONGRATULATION.

Friend Sans Dissimulation:

After a long procrastination,
Arising from the complication
Of the affairs of the nation,
Which I have e'er in contemplation,
I was aroused with exaltation
By your late aberration
To take that in consideration,
And enter into confabulation
For your especial edification,
On so important an actuation.
Omitting the tedious narration
Of our prolonged separation,
I shall, eveiding long oration,
Express my keen gratification
At the tender infatuation
Which has had the operation
To place you beyond separation
With the object of your adoration.
Not all the words ending in ation
Are in sufficient multiplication
To express my exultation
At your final subjugation.
Enjoying the felicitation
Of the successful termination
Of the siege, and capitulation,
Accept also my gratulation,
And sincerest aspiration,
That you find the realization
Of each rational expectation,
Growing out of a situation
Enchanting in its participation,
Promoting the interests of the nation,
And subserving the ends of creation!
It was a source of lamentation,
Of agonizing ejaculation,
With your friends in the Yankee nation,
To witness your continuation
In a state of single relation.
We feared some bachelor's perpetuation
Might possibly be the occasion,
Or that your eager occupation
In some worldly hallucination
Engrossed every lucubration,
And prevented the emanation
Of any scintillation
Unconnected with that temptation.
How great then was our jollification
At the public declaration,
Made without equivocation,
That Miss Mary Moderation
Had captivated your imagination,
And led you to the perpetration,
To the glorious consummation
Of perpetual hymenization.
The courier's embarkation,
In immediate expectation,
Compels a speedy termination.
Yours, with great estimation,
EBENEZER EMULATION.

A TABLE

CONTAINING THE ALTITUDE OF MOUNTAINS, CALCULATED FROM BAROMETRICAL OBSERVATION, BY A. PARTRIDGE, CAPTAIN IN U. S. CORPS OF ENGINEERS.

Names of the ranges.	Names of the different peaks.	Alt. in feet. Above their bases.	Above the sea.	Remarks.
WHITE MOUNTAINS.	Mount Washington,.....	4885	6634	The White Mountains are situated in the north east part of the state of New Hampshire, and are probably the highest on this side the Mississippi.
	1st peak south of Mt. W.	3904	5653	
	2d do do do	3584	5333	
	3d do do do	3430	5179	
	4th do do do	3367	5116	
	5th do do do	2881	4630	
	Base of the mountains,...	....	1749	
CATSKILL MOUNTAINS.	Round Top,.....	3105	3804	These peaks lie west from Catskill town and are probably as elevated as any in the range, the turnpike passes over the range of Catskill Mts. from Catskill town to Delaware river.
	High Peak,.....	3019	3718	
	Highest part of Turnpike,	1729	2425	
	Base of the mountains,...	....	699	
GREEN MOUNTAINS.	Killington Peak,.....	2994	3924	Killington Peak is situated in the town of Killington, Vt., and is said to be highest in the rang.
	Base of the mountains,..	....	930	
NEW YORK HIGHLANDS.	Crows Nest,.....	....	1418	These mts. are situated on Hudson's river, below Newburgh; as most of them rise immediately from the river, their altitude above their bases is not considered.
	Butter Hill,.....	....	1529	
	Bull Hill,.....	....	1484	
	Old Beacon,.....	....	1471	
	New Beacon,.....	....	1585	
	Bare Mountain, ...	....	1350	
	Break Neck,.....	....	1187	
	Anthony's Nose,.....	....	935	
	Sugar Loaf,.....	....	866	
	Fort Putnam,.....	....	598	
	West Point Plain,.....	....	188	

FAIR LEATHER.

The following is the specification of a patent granted to JAMES C. BOOTH, of Philadelphia, Pennsylvania, December 5th, 1840, for a mode of whitening or preparing what is termed "fair leather."

Be it known that I, James C. Booth, of Philadelphia, Pennsylvania, have invented a new and improved mode of manufacturing, preparing, whitening, or making, what is termed "fair leather," and I do hereby declare that the following is a full and accurate description.

In order to obtain or put the leather in the state designated, so that it may have the peculiar light-colored and fair appearance which is the object of the invention, I employ it (the leather) in that stage of the manufacture when it is in its moist state, after it is "finished;" or if it is used when the leather is dry, then in the latter case it must be moistened through with clear water. While it is thus wet, I spread with a sponge, brush, or other suitable article, the following liquid composition over the fair surface of the leather, giving it sufficient dampness to let the pores absorb the liquid. The liquid to be applied, is a solution of the protomuriate of tin in muriatic acid, ether, alcohol, and water, and is composed as follows:—Any quantity of the protomuriate of tin is dissolved in about one half of the weight of muriatic acid, and to this solution ether is added in the proportion, by weight, of three times the weight of the protomuriate of tin, and then a quantity of alcohol by weight, equal to four times the weight of the protomuriate of tin. To this may be superadded clear fresh water in the proportion of three parts by weight, as compared with the protomuriate of tin.

If the leather to be employed under this process is not clear, or is very dark, or spotted, then a greater proportion of muriatic acid is to be used, say an equal quantity, by weight, or twice as much, by weight, as compared with the protomuriate of tin. Immediately after the application of the above described liquid composition to the leather, I spread over it, in a similar manner, spirits of turpentine with or without a small quantity of tallow, dissolved in it, sufficient to make it pliable, and the leather is suffered to dry in the ordinary manner, and the operation is complete. The spirits of turpentine, alone will generally be sufficient to give pliability to the leather after the first composition is employed, without adding the tallow, but when the leather is stiff or hard, or not sufficiently soft, the tallow may then be added. The leather after this process will have the required whiteness and fair appearance.

What I claim as my invention or discovery, is the use of the protomuriate of tin dissolved in the manner, and by the liquid, above described, for the purpose of communicating a light-colored and fair appearance to leather, be oak tanned, bark tanned, hemlock tanned, with its natural or ordinary color. JAMES C. BOOTH.

DIGNITY OF LABOR.

From whence originated the idea, that it was derogatory to a lady's dignity, or a blot upon the female character, to labor? and who was the first to say, sneeringly, 'Oh, she works for a living?' Surely, such ideas and expressions ought not to grow on republican soil. The time has been, when ladies of the first rank were accustomed to busy themselves in domestic employment.

Homer tells us of princesses who used to draw water from the springs, and wash with their own hands the finest of the linen of their respective families. The famous Lucretia used to spin in the midst of her attendants; and the wife of Ulysses, after the seige of Troy, employed herself in weaving, until her husband returned to Ithaca. And in later times, the wife of George the third, of England, has been represented as spending a whole evening in hemming pocket handkerchiefs, while her daughter Mary sat in the corner, darning stockings.

Few American fortunes will support a woman who is above the calls of her family; and a man of sense, in choosing a companion to jog with him through all the up-hills of life, would sooner choose one who had to work for a living, than one who thought it beneath her to soil her pretty hands with manual labor, although she possessed her thousands. To be able to earn one's living by laboring with the hands, should be reckoned among female accomplishments; and I hope the time is not far distant when none of my countrywomen will be ashamed to have it known that they are better versed in useful than they are in ornamental accomplishments.—[*Lowell Offering.*

ALBANY, SATURDAY, AUG. 13, 1842.

☞ As two whole weeks have elapsed since we instructed our distant subscribers in arrears how to transmit money, it is quite possible they may have lost the secret. They are again reminded that postmasters will remit money to pay subscriptions, postage free. We hope it will not be necessary to print the name of each subscriber alluded to, to satisfy him that no one else is intended.

☞ A subscriber at the west begs us not to publish his name as he is a Washingtonian out of work! Very good.

☞ On the opposite page will be found a table of the altitudes of the different ranges of mountains in the northern states, by Capt. Partridge; never before published. The Captain was in the habit of traversing the country on foot, and climbing its mountains, and noting their dimensions. We are indebted to a friend for the original manuscript in the Capain's hand writing.

☞ Quite a respectable number of articles from correspondents on file, awaiting their turn.

☞ In the article headed *Eminent Shoemakers*, of last week, the word *Democrat* occurred instead of *Republican*.

☞ A correspondent inquires the most *simple* and *efficacious* cure for warts that has come within our knowledge! The sovereignest remedy is amputation at the wrist. The operation is also quite a *simple* one to a skilful surgeon, and is nothing when you get used to it. In cases where the remedy induces fuliginous vapors, we would prescribe diacapers, diazinziber and diacinimenium, with the syrup of borage and scolapendræ to remove them!

☞ Friend Hank will please hand over that A.B. diploma if it really belongs to us. It is more than six years since it was filled out, with all the array of gigantic seals and mighty names in divinity, physic, literature and philanthropy, and has failed to reach its destination to this day. How about that? As the millenium approaches we shall await its restitution in awful suspense.

☞ C. K. M. shall have more than justice done him; his name was not returned here that we know of, by D. T. Bisbee, or the paper would have been sent to him. Bisbee has played similar pranks with other establishments, and will probably be overtaken ere long.

☞ The *Century Plant* since our last has put out several new branches, and bids fair to blossom during the next week. The inclosure has been enlarged to give it room to expand. Some of the leaves, we are told, are found on measurement to be seven feet long and one foot broad.

AMSDEN'S SUBSTITUTE FOR WEIGH-LOCKS.

In our last we published an article on this apparatus, describing the principle and some of its advantages over the clumsy apparatus now used upon our canals. Its perfection and simplicity, based as it is upon a well known principle in science, the facility of its adaptation to use, and its vast importance to all engaged in commerce upon our inland waters, have constrained us again to bring the subject before our readers. We learn that the subject has been long before the canal officers, and that the inventor has expended much time and money in fitting up the apparatus in various ways, to test its accuracy for their examination; but as it creates no new offices, and has the tendency to do away with some now in existence, as well as to lessen the public expenses where they may be used for party purposes, he is doomed, like hundreds of his predecessors, to meet with the neglect which official dignity metes to the humble inventor in all ages. Instances are by no means rare, in which the mechanic, after having spent years in patient thought and experiment, and consumed the substance which the steady hand of industry has accumulated, is either defrauded of his just reward when he has matured his invention, or the world is long deprived of its usefulness by the unfavorable decision of some men, whose influence over the public exceeds their ability to comprehend the simple principles of mechanism, or properly to discriminate between the merits of modern improvements and antiquated standards. As this instrument must have the sanction of men in office before it can be brought into use, it may be long before the public will derive any benefit from it, or the inventor reap a reward for his labor and time in perfecting it.

Let us inquire whether Mr. Amsden's apparatus is in keeping with the principles of science. Now it is a well known fact that hydrostatics furnish the only infallible test for ascertaining the specific gravity of bodies; that whatever floats in water displaces precisely its bulk of that fluid; that whatever pressure is placed upon the body thus floating, sinks it exactly in proportion to the amount of pressure applied—displacing the exact relative proportion of water to the weight of the superincumbent body. This discovery was made, it is supposed, by Archimedes, and all future experiment attests its accuracy. This position admitted, the next point is, whether Mr. Amsden has made a proper application of the principle to the purpose in question.

It is to be borne in mind that the apparatus is to stand at or near the centre bearing of the boat, occupying only as much space as a post 6 inches square; the buoy being placed in the cylinder, rests upon the surface of the water, and sustains the guage. This projects through the top of the cylinder, and indicates by the notches upon its side, the rising and sinking of the boat, as articles are removed or placed upon it. Let us suppose a boat in the proper condition to be placed in the weigh-lock to take its light weight, before being freighted. The mark indicated upon the guage at this time may be taken as the zero or light weight of the boat, and what shall subsequently appear as the boat becomes loaded, and the guage projects upward, may be relied upon as the accurate tonnage. *It cannot be otherwise!* The adaptation of the guage to different boats was sufficiently explained in our last number. The process is so simple and accurate that any man who has not a salary to lose or the safety of a party to look after, will not fail to perceive that the guage will conform to the exact capacity of any boat; and as the principle is *immutable*, it will ever after indicate the true weight of whatever is placed upon the vessel.

We are aware that some objections arise at first in the minds of many who are not conversant with hydrostatics. We will take up the most important of them and briefly show their fallacy.

1. *The unequal manner of distributing the load upon the boat.* Let us suppose a canal boat of such capacity as would require one ton placed at the centre to sink the whole boat from bow to stern half an inch. Remove the weight to one end and the result would be that the loaded end would sink another half inch, while the other would rise half an inch, and the guage in the centre would remain the same. Place another ton upon the opposite end, and it would sink an inch, the first end loaded remaining stationary. So that a boat carrying fifty tons may have half its lading placed in one end and nothing in the other, and the guage will present the same indications as though the lading were equally distributed. This experiment is easily demonstrated, beyond all possibility of error.

2. *Different temperatures of water.* As the buoy is independent of any restraint from the boat, the effect will be the same upon both, and it will not therefore vary on that account. This has been tested to satisfy doubts.

3. *Variations in fresh and salt water.* The result will be the same as in warm or cold water. But, as the canal revenue does not extend to salt water, nothing further need be said under this head.

4. *Variations in day and night.* When it is found that a given quantity of water will weigh *more* or *less* by night than by day, then will be the proper time to investigate this point.

5. *Variations in deep and shallow water.* We venture to assert that whatever will sink in shallow water will also sink in deep, till it reaches a depth far beyond that required to float a canal boat, at any rate. Whenever any one shall have discovered error in this we shall be happy to hear from him. The last three objections are puerile, but have been urged by some grown children who had the *might* to make them valid.

6. *Variations from change of position.* When a boat becomes *hogged*, as the term is, or becomes heavier by being saturated with bilge water, the effect will be to carry down the tube with it, and consequently the zero on the guage will raise above the guard or cap of the cylinder. Any error from this will be obviated by noticing the height of the guage when the vessel is unloaded, and the zero may be changed as the boat increases in weight from that cause. It is evident that if the boat should have increased in weight from any such cause after being freighted, it may be detected when the freight shall be removed.

A fear has also been expressed that frauds might be practised on the apparatus by those who have charge of the boat. For all the fraud which we can conceive it possible, from the nature of the instrument, to be practised, there are means of detection, such is its extreme simplicity. And furthermore Mr. Amsden has very ingeniously placed the apparatus beyond the reach or control of the person running the boat. He can only see the guage, which is all that is necessary for him.

We come now to point out the advantages of this principle. As it is intended to supercede the necessity of weighlocks, in order to arrive at a more just estimation of its value, it will be proper to make a calculation of the expense of erecting those uncouth, destructive and inefficient machines, of keeping them in repair, attendance, &c. It may be difficult to arrive at an accurate average estimate of the cost of erection; but taking the one recently erected at Utica for a guide, the cost of lock, scale and building would not be less than $170,000, making a total at the lowest calculation of $850,000 for the five locks required on the whole line of the canal. Add to this the expense for attendance, repairs, &c., say $50,000 a year, which was the cost of the old ones, and the enlarged ones will not be likely to be any less. This amount for a series of years is enormous, and is a serious drawback on the revenue. But this is not the only sacrifice made to these granite Moloch's. There is a heavier loss still which falls upon private individuals and companies. We allude to the destruction of boats and loss of time. It is estimated that the damage to boats is from twenty-five to fifty per cent on their value. Now there are upwards of 4000 boats running on the different canals of this state. Of these we will suppose 2000 to be line and lake boats, costing when new from twelve to sixteen hundred dollars each. Averaging them at $1,400, we have the sum of $2,800,000. The remaining 2,000 we will suppose to be scows, costing about $300 each; total, $600,000. Now it is ascertained that these boats last on an average but five or six years; or about half the time of the Ohio canal boats, where

there are no weigh locks. It is easy to trace the cause of this difference; for boats which have been condemned on our canals as unfit to go into the weigh locks have been taken to the Ohio canal and run longer there than they had here before their condemnation. This proves a loss of 50 per cent; but assuming it at 25 per cent, and we have an annual loss of $141,666, allowing them to run six years. Add to this the loss by detention, of which the navigators alone can form an estimate.

On a review of the whole matter, we are amazed at the indifference and stupidity manifested on this subject. Here is a simple, cheap and infallible method of ascertaining the lading of boats, an all-important subject to the whole people, which has been repeatedly brought to the notice of the legislature and to the canal commissioners, without enlisting the attention of a single individual to give it his influence with those who have the authority to adopt it for use, or to give it a fair trial in order to test its merits. As the old weigh-locks are on a swift decline and a vast sum will be required to replace them, now is the time to give the apparatus of Mr. Amsden an experiment; it needs but a short time to test its accuracy. It is so clearly susceptible of demonstration, as to challenge all attempts at refutation.

Under all these circumstances is it just that the inventor should be deprived of the use of his invention, and the public denied a participation in its benefit? How shall an appeal be made to the functionaries having charge of our internal improvements, to open their eyes to the interests of the people, and forget for a moment party risks in bringing forward a new measure which promises so much utility? It is to the legislature and the canal board that we have to look for an examination of this principle with a view to its being brought into use; and if found to be correct, as we are sure it will be, let it speedily be adopted as the standard by which to regulate our canal tolls.

MEETING OF THE STATE ASSOCIATION OF MECHANICS.

It should be remembered that the annual meeting of the association is to be held in Albany on the last Wednesday in August. It is particularly desirable that there should be a good attendance, and, as there appears to be some misunderstanding in relation to the manner in which persons may become members of the association, it is deemed necessary to say that any person may become a member of it by subscribing to the constitution and complying with its requisitions. Many have supposed that they must be appointed by some county association, as a delegate, before they could be admitted. This is not so, although delegates from such associations are members.

Will not the mechanics of the state consider this, and will not those so conveniently situated to attend see that their counties are represented at the meeting? What say you of Schenectady, Saratoga, Oneida, Columbia, Greene, Dutchess, Ulster, New York, &c., &c., you have been backward in this matter while many farther off have moved like men determined to attend to the interests of their profession. Which sends most, Schenectady, Utica or Hudson, Waterford, Poughkeepsie or Catskill? We shall see.

AMERICAN ANTIQUITIES.

Relics are every day brought to light in this country of the mechanical arts and skill of a race of people, whose history does not exist even in tradition. A late number of the *Tuscaloosa Monitor* contains a description of a stone image in the possession of a gentleman of that city which was dug up in its vicinity. It is represented about ten inches long, and in due proportions, of a human being; the eyes, ears, nose, mouth, cheeks, forehead and arms are distinctly carved. The top of the head is flat, and has on one side four or five cuts, or gashes. The image was first exposed to view by the tearing up of the earth, by a large blown down tree. Near the spot was found a complete set of elegant weights, of a fine black polished stone, from a pound to an ounce, corresponding, nearly, with the standard weights now in use. These evidences of traffic certainly denotes a state of information and trade once enjoyed.

Near Carthage, 16 miles from the city of Tuscaloosa are several mounds, from 50 to 80 feet high, marken with ancient fortifications, on one of which the same gentleman collected stone hatchets, spears, vessels &c.

POCKET MAPS.

The French have arrived at the *ne plus ultra* of pocket literature in their handkerchiefs, as may be seen by the following extract of a letter from Mr. Walsh to the *National Intelligencer*, which describes a truly fancy and *scientifique wipe*, such as the Artful Dodger never dreamed of:

The *foulards scientifiques* are silk pocket handkerchiefs of the finest and most beautiful texture, on which are impressed, with perfect skill and effect, series of maps, masterpieces in the fine arts, and so forth. You can purchase, at a price advanced but little, on the most elegant India tissues, from the manufactories of Jony, the General Atlas of the Departments of France and the General Atlas of Antient and Modern Geography—50 maps from copper and steel plates, printed on whole pieces of silk in a short time. France, "topographical, historical, industrial and warfaring," may be put into your pocket to be studied wherever you please, or all the public structures of Paris and Rome, to be admired in the clearest copies of the richest lustre.

RIFLE MAKING.

In the above rude cut here presented the course of the *grooves* through the rifle barrel are shown, and the cuts or grooves as they appear upon the muzzle of an octagon barrel.

In cutting the rifle barrel but little philosophy is generally used, most of the gun makers having their cutting saw square or round upon the face, so that the cuts appear as those marked 1 and 2 in the cut, which gives in the case of the square ones, (No. 1,) two deep sharp corners, one upon each side of the groove, usually about seven to ten in number in the barrel. Now, the object being an edge against which the patch may bear to turn the ball in its passage through the barrel, is well gained here, and and care need only be had in the depth of the cut, for as the smooth finish of the barrel is all essential to its correct shooting, it will be seen that the patch upon the ball should entirely fill the cut or groove, so as to carry down with it any dirt or deposit that may lodge in them, leaving a perfectly clean barrel above the ball, which, if the cuts are too deep, it will not do, and the sure consequence is dirt and rust collects upon the bottom and extends to the sides of the cut, destroying in a short time the goodness of the piece. Where they are too deep they also let the smoke and gas from the powder by the ball, drying the patch and perhaps burning it at its very start so as to destroy its tenacity, and consequently the use for which it is put there. Again, when too deep the bottom is not touched by the swab or wiper, in cleaning, without much difficulty.

The round bottom grooves, No. 2, presenting less edge against the patch, must of necessity be deeper than the square ones, and the ball heavier patched or tighter forced in, to follow the twist; of course the ball will be more marred in forcing down, which should be avoided—therefore the square cut or edge is the best, the round having only the advantage of cleaning and polishing the easiest.

The grooves being spirally through the barrel, (see the cut,) it will be perceived that the ball and patch are constantly pressing from one edge and against the other in its passage out; there is, therefore, no use of the other edge of the square groove, and the French, with good philosophy, cut their fine rifle pistols with a triangle cut, as seen above, No. 3, and by cutting many more of them and of less depth, they get sufficient edge to the patch without making them hard to clean. I have never seen an American rifle cut in this way, but I see no reason why it should not work well. The chance of improvement is at least worth the experiment.

There has been much experiment about the breech or chamber of all kinds of guns, and the result is a conviction of the superiority of the English "patent breech," forming a concave or cup to hold the charge of powder, the communication by "vent" or "touch hole" being exactly from the centre or back of the base. The patent chamber is not, however, decidedly necessary to a good rifle, as it is for a fowling piece. a plain breech pin a little cupped in the end being easy to clean answers a good purpose for rifles.

The *sights* are a difficult thing to arrange, and like spectacles, must be fitted to the eye of the shooter, different eyes requiring different shaped sights. Regard should be had to as much distance as can be made between the eye and the forward sight, and the *notch* in the *back sight* should always be so small that the forward sight will just fill it to the eye of the shooter. The back sight and barrel of the rifle should be *bronzed* or *browned*, so as to prevent the reflection of light from them, and the forward sight should be white, smooth and clean. The back sight should be made to move across the barrel, as well as up and down, at the pleasure of the person using, so that the marksman can, by trying, regulate the direction of his piece to a *point blank* nicety for any *bull's eye* within its reach.

The *detant* or *hair trigger* is also an essential to the perfect rifle. The English and French detants are both ingeniously contrived and excellently made, but an "improvement" of some Jonathan in a set *screw* through the trigger, so as to regulate the set by the notch rather than by the stiffness of the set spring, has vastly added to its utility and security in accurate shooting.

B. C. T.

NEW YORK GAZETTEER.

Mr. Disturnell has issued a new edition of his excellent gazetteer of the state, the first edition of 2,000 having been disposed of in a few months. We noticed this work on its first appearance in the 19th No. of the Mechanic, and have copied articles from it occasionally.

While on this subject we cannot omit to mention, that on taking up a thick and very attractive London work at the bookstores recently, the following item attracted our attention.

"*Canajohary*, a town of New York, in Montgomery county, on a creek on the Mohawk, noted for cider! Population 4010."

We have abridged Mr. Disturnell's description of this place.

CANAJOHARIE, Montgomery county, is situated 10 miles west of the village of Fonda, and distant 55 miles from Albany; contained in 1840, 5,146 inhabitants.

The village is situated on the south side of the Mohawk river; it was incorporated in 1829, and now contains about 1300 inhabitants, 175, dwelling houses, 1 Presbyterian, 1 Dutch Reformed, 1 Lutheran and 1 Methodist church; an incorporated academy, 4 taverns, 10 stores and groceries, 2 grist mills, 2 distilleries, 1 brewery, 1 furnace, 2 saw mills, 1 plaster mill and an extensive stone quarry, where are quarried a fine quality of building stone, which are also used in the construction of locks on the enlarged Erie Canal, which passes through the center of the village; here also is the proposed termination of the *Cattskill* and *Canajoharie Railroad*, which is in part finished and in operation.

THE TARIFF BILL.

On Tuesday the president returned to congress the tariff bill with his objections to signing it. He urges the present condition of the treasury, and the embarrassments growing out of the existing distribution law as the reasons why it should not go into operation! This decision was confidently expected; yet while it calls down the unqualified denunciations of those who voted for him "without any why or wherefore," the opposite faction openly rejoice at the defeat of the bill. The halls of government may be likened to a raree show, in which its officers are the actors and the universal Yankee nation the audience. The latter are witnessing a very disagreeable farce, which is liable to be interrupted a by scene as fatal as that which closed over the Richmond theatre, involving the whole in ruin. It is very possible that some violence may follow the high-handed proceedings that now disgrace the legislative and executive powers of the country, both of which have excited universal complaint. The present session has been little else than a scene of strife and contention between the president and congress; the latter rejecting the nominations of the former, and the former vetoing the acts of the latter—meanwhile the country, and especially the mechanic interest, is in a hopeful condition. Our politics and finance have become the derision of the world, nor will matters be at all improved while the offices of the state and general governments are filled by rabid politicians, and made the reward for party drudgery.

☞ "*Value of the Union.*" This vexed question is now settled by one who knows its worth. Maj. Noah has decided it a *two penny* concern—"not more than two cents, in any case, should be paid for it," says the major.

PERPETUAL MOTION.

To-day we were shown the patent, which Mr. Evans Casselberry has obtained, for inventing a method of winding up a clock, by means of the expensive power of mercury, produced by the ordinary changes in the temperature of the atmosphere. This is, in effect, a "*perpetual motion;*" because, if a clock be kept wound up, it will run as long as the machinery shall last.—*Madisonian.*

SYNOPSIS OF NEWS, ETC.

A case of spontaneous combustion occurred in Hartford, Connecticut, recently. In drawing linseed oil, some of it was spilt on the floor: it was absorbed by a coarse sponge, and placed on a shelf. The smell of something burning led to an examination of the premises, when the sponge was found in a state of combustion, and just ready to burst into a flame. Only about two hours had elapsed between the time of using the sponge and the discovery.

Laureat made his forty-fourth successful ascent from the Battery in New York, on Tuesday afternoon, 3d Aug. He was up half an hour, reaching an elevation of about a mile, descending near Gowannus Bay, on Long Island.

The freight of a barrel of flour to Boston, Newburyport, or Portland, is 10 a 12½ cents; the postage of a letter to the same places is 18¾ cents.—*N. Y. Journal of Commerce.*

The tailoring business is carried on in a small town in Pennsylvania, under the firm of *Call & Settle.*

The editor of the Memphis Enquirer recently saw some *white blackberries* gathered from a bush growing in that city. This is a new color. We know that *black* berries are red when they are *green*, but white ones are a novelty.

The miseries of the English operatives continue to increase. The last accounts are a repetition of previous ones greatly aggravated, and an outbreak was constantly expected.

Captain Stockton has had constructed a wrought iron cannon that will throw a ball weighing 112 lbs. It was tested a few days since at the navy yard in Philadelphia. The largest charge of powder used was 45 pounds.

Capt. Rufus Avery, who was at the storming of Fort Griswold, in Groton, Ct., when it was so gallantly defeated by Col. Ledyard, and who was severely wounded at the time, died at Groton last week at an advanced age.

A fire broke out in Godfrey's ship-yard at Topsham, Me., which spread so rapidly that the workmen had barely time to escape with the loss of their tools. A ship of 420 tons was consumed on the stocks, and other property to the amount of $20,000.

It is ascertained that the Rotunda in New York, by the burning of which Mr. CATHERWOOD lost his fine panoramas, was set on fire by lightning. By it Mr. C. has lost four of his grand panoramas, viz. Jerusalem and Thebes, which were in exhibition, and Lima and another, which lay on the floor, rolled up. Also, drawings collected by years of toil from distant parts of the world, and nearly all the drawings and objects of curiosity collected by Messrs. Catherwood and Stevens from Central America.

At this season of the year, the health of children should be particularly attended to. Their little systems are easily deranged, and nothing more effectually disorders them than the constant munching of fruit. Fruit is by no means essential to their existence, on the contray we see that it is frequently the indirect means of destroying it. Parents, therefore, who have the health of their children at heart, will in a great measure prevent it from being impaired, by denying their infant offspring every particle of fruit.

CIRCULAR.

To the Mechanics of the State of New-York:

The undersigned, "Executive Committee of the N. Y. State Association of Mechanics," address themselves at this time, for the purpose of calling attention to those interests believed to be connected with their callings as a body, such as is emphatically the *mechanics' interest.*

It will be remembered that nearly a year since the mechanics of this state met in convention at the Capitol, in Albany, for the purpose of discussing the effects of the state prison system of mechanical labor upon the interests of the mechanics generally, and the mode of obtaining relief. So respectable in numbers and talents was that convention, that it had a decided influence upon the management of that question before the public and before the legislature last winter, by eliciting a discussion of its merits before both, and the results are an acknowledgement of our claims, and in the law passed upon that subject, an approximation to relief was given. It was not considered by the mechanics to be such relief as should have been given to them, but as there was coupled with it a commission to examine another project for the employment of the convicts, it has been acquiesced in, although it was understood from the manner and nature of the appointment, that it was a mere pass-over to get rid of the subject, and that there was no intention of considering it seriously.

At the same convention above spoken of, the incipient steps were taken for forming a "State Association of Mechanics," which was consummated in October last, and a paper established under its control, devoted to the interests of the mechanics and manufacturers, which has now reached its 35th No. It is a conceded point that every class must take care of its own interests if it would have them subserved, and neither facts nor arguments are now required to prove that by associations come the most correct conclusions, and the most efficient action. Nor will it be denied that the mechanics, as a body, have interests deep and abiding to be taken care of. The questions now agitating the country from ends to centre is one of more vital interest to the mechanics than to any other portion of community, involving as it does the terms of their competition with the crushed, degraded, down trodden laborers of monarchial Europe, and with many trades it is the question of their existence in this country, and with all their comparative standing with the rest of community.

With such reasons therefore, and others obvious to every one, we appeal to the mechanics to carry out the organization started last year, by forming county associations, and appointing delegates to the state society, *meeting on the last Wednesday of August next.* Also to name members of the "general committee," equal in number to the members of assembly from each county. And where there may not be county associations, we would ask town or village societies of mechanics to select and send the names of active intelligent mechanics to compose such committee; the duties of which are, 'to be a channel of communication throughout the state'—*a general corresponding committee.* To complete so important an interest, the committee feel that they ought not and that they will not appeal in vain to their fellow mechanics.

And the question is also involved, whether the mechanics of the State of New York will sustain a paper devoted to their interests, or whether it shall be said that of *a hundred and seventy-five thousand mechanics* there is neither spirit nor enterprise enough to support a mechanics' paper. The one now established has a good beginning, which it has cost much time and labor to establish, and which, owing to the peculiar depression of the times and the impositions of agents, has not as yet paid its way. It was expected that mechanics would come forward voluntarily to its support, and advance the small amount of its subscription price; in which case efficient talent might be enlisted in its management. The committee wish to awaken the attention of prominent mechanics in each county to interest themselves in behalf of the paper, as an organ of the mechanic interest in the state. It may be done without trenching upon much of their time, and will amply remunerate all their exertions. It is particularly desired that mechanics should furnish to the paper information of general interest as well as that of particular trades. The committee earnestly ask your attention and immediate action upon the above.

WILLIAM H. PECK, Kings co.
EZRA S. HOWARD, Rensselaer co.
JAMES WALLACE, " "
JAMES HEGEMAN, " "
JOHN WAYDELL, New York city.
WARREN HECOX, Onondaga co.
O. G. STEELE, Erie co.
SAMUEL BAYLISS, Monroe co.
BENJ. C. TRUE, Albany co.
ANDREW JONES, " "
WILLIAM HAWE, " "
ABRAM KOONZ, " "
ALFRED PIERCE, " "
WM. WHITNEY, " "

RAYMOND'S IMPROVED FRACTURE APPARATUS, for the lower limbs, is an instrument combining all the advantages mentioned by W. Parker, M. D., of New York, while speaking of Dr. Bowen's Apparatus. Mr. R. dispensed with the crutch, (as the arm is not a fixed point from which to make extension,) and introduces the much more improved and mechanical way of making counter extension by the belt around the Pelvis. He has also a very simple additional method of his own in the management of the foot, and likewise a further improvement in flexion of the limb, thereby rendering the instrument at once simple and easy to be adjusted. It may be used on a child 2 years of age, or for an adult person. We are satisfied that this instrument, in its present improved state, is the most perfect of any thing of the kind now in use in this country.

DAVID LARRABEE, M. D., of Paris, Oneida co.
J. T. TELLER, M. D., of New Hartford.
H. HURLBUT, Physician and Surgeon, Utica.
SIMON Z. HAVEN, JOSIAH RATHBONE, THEODORE POMEROY, } Physicians & Surgeons, Utica.

From the Boston Medical & Surgical Journal of March 30th, 1842

RAYMOND'S FRACTURE APPARATUS.—This instrument seems destined to win its way into general favor with surgeons as well as patients. If the naval surgeons would take out half a dozen in each ship, they would find them, we think, superior to any contrivance now extant for counter extension. Since receiving the opinion of a surgeon who has a fractured thigh under his care, secured by this excellent device, we feel authorised to speak of it more warmly than on any former occasion.

☞ All orders post paid, addressed to N. S. RAYMOND, No. 83 Columbia, corner of State street, Utica, will receive attention.

BOOK BINDING.—HARVEY H. CORNING, sign of the golden ledger, 82 State street, Albany, carries on the above business in all its various branches, viz: PLAIN, EXTRA and SUPER EXTRA—has a first rate RULING MACHINE and other necessary implements for manufacturing BLANK BOOKS of every description, on the most reasonable terms, of the best materials and workmanship.
N. B. An assortment kept on hand. 27.

NEW YORK STATE MECHANIC,
A weekly paper, devoted to the interests of Mechanics and Manufacturers,
IS PUBLISHED EVERY SATURDAY,
By JOEL MUNSELL.
No. 58 State Street, Albany,
At $1.50 per annum in advance.

MISCELLANY.

LIFE.

The leaf that falls in Autumn's hour,
The rose that fades upon the stem,
Are emblems of the silver power
Of time and change o'er us and them;
Yet happier is the rose's fate,
For spring will other leaves restore,
And summer will new flowers create,
As bright as those which bloom'd before.

But when life's morning dreams depart,
And grief succeeds to fancied bliss,
Oh! what shall cheer the lonely heart,
Or soften sorrow's bitterness?
Years will roll on—and time will bring
Its various changes, but in vain—
There is in life but one short spring,
And it can ne'er return again!

ANTIENT ROMAN TOMBS.

There have been found lately in the Sierra Elvira, in Spain, more than two hundred Roman tombs, and an aqueduct. Several skeletons bore the rings of Roman knights, and some of them had in the mouth the piece of money destined to pay the ferryman Charon. These skeletons crumbled into dust as soon as they were touched. With them were found gold and silver bracelets, amber and crystal necklaces, ornaments of various kinds, and pieces of armor.

THUNDER MADE TO ORDER.

The Grand Rapids Enquirer tells of a man in "those diggings" being informed that thunder was death to cut worms, and being much troubled with their works in his garden, and dispairing, too, of any thunder of nature's manufacture, resolved to have some of domestic production. Pursuant to this determination, he charged an old musket, muzzle full—took a pail of water and lantern—proceeded to the cabbage garden—rained on the plants copiously from his bucket—made the lantern open and shut sesame, by way of lightning, and then, in hot haste, let off, "old copenhagen" for thunder. The worms "cut and run," while the manufacturer of the domestic article, lay with his back to the earth, rendered oblivious from the knocks caused by the re-percussive action of the thunder machine!

BITING AT THE NAKED HOOK.

As a minister was walking upon one of our eastern wharfs, he heard a man in a fishing boat just pulled up, swearing very profanely, and resolved on reproving him. For this purpose he stepped up to the boat and began to enquire concerning the manner of taking fish. The fisherman answered this inquiry by saying that for taking such a kind of fish he baited his hook with such a material, and for such a kind of fish, baited his hook with such an article. Said the clergyman—

"Do you not take any without bait?"

"No," said the fisherman, "I never did but one; one damned fool bit the naked hook."

"Well," said the clergyman, "the devil is a great fisherman, and to take the ambitious he baits with the honors of the world, and to take the avaricous he baits with silver and gold, and for the pleasure-seekers he baits with sensual gratifications, but the profane swearer is like your foolish fish, he bites at the naked hook."

LIGHTNING.

It was one of the crotchets of Cotton Mather, a hundred years ago or more, that lightning was an emissary of the devil, and was guided by his direction; and that as the devil had a particular spite against meeting houses and ministers, they were more frequently struck by the electric fluid, than other objects. If old Cotton were alive now he would find abundant confirmation of the truth of his theory in the fact that a meeting house was struck by lightning, a few days since, in Connecticut, and two clergymen, while administering the sacrament, were struck down—no other person being injured.

THE EXPLORING EXPEDITION.

A letter from Washington to the New Orleans Advertiser, states that Captain Wilkes, of the exploring expedition, has brought home, among other valuable things, 2000 charts, 1000 maps, 11,000 specimens of plants, 4000 specimens of fishes, 50,000 specimens of shells, 2000 landscapes, 28,00 specimens of reptiles, 4000 specimens of marine plants, 1500 drawings of South Sea Islanders, 36 large boxes of journals, &c. &c.

THE ALPINE HORN.

This instrument is made of the bark of the cherry tree, and like a speaking trumpet, is used to convey sounds to a great distance. When the last rays of the sun gild the summit of the Alps the shepherd who inhabits the highest peak of these mountains takes his horn and cries with a loud voice, "Praised be the Lord." As soon as the neighboring shepherds hear him, they leave their huts and repeat these words. The sounds are prolonged many minutes, while the echoes of the mountains and grottos of the rocks repeat the name of God. Imagination cannot picture any thing more solemn or sublime than this scene. During the silence that succeeds, the shepherds bend their knees, and pray in the open air, and then retire to their huts to rest. The sunlight gilding the tops of these stupendous mountains, upon which the blue vault of heaven seems to rest, the magnificent scenery around and the voices of the shepherds sounding from rock to rock the praise of the Almighty, must fill the mind of every traveller with enthusiasm and awe.

DISEASE WITHOUT A REMEDY.

A certain lady waited on a physician, in a great trouble about her daughter. 'What ails her?' said the doctor. 'Alas, doctor! I cannot tell; but she has lost her humor, her looks, her stomach; her strength consumes every day, so that we fear she cannot live.' 'Why do you not marry her?' 'That we would fain do, and have offered her as good a match as she could ever expect, but she will not hear of marrying.' 'Is there no other, do you think, that she would be content to marry?' 'Ah, doctor! that is what troubles us; for there is a young gentleman we doubt not that she loves, that her father and I can never consent to.' 'Why, look you madam,' replies the doctor gravely, being amongst all his books in his closet, 'then the case is this, your daughter would marry one man, and you would have her marry another; in all my books I find no remedy for such a disease as this!'

ARTESIAN WELL IN LONDON.

The sinking of the Artesian well in Piccadilla has, we believe, been attended with the most perfect success, and there is now every probability of an inexhaustible supply of the purest water. After boring to a depth of 240 feet water was arrived at, which immediately rose to within 80 feet from the surface. Over the well a handsome iron pump is in progress of erection, and the inhabitants may now reckon upon a certain and plentiful supply of fine spring water. The expense of this useful work is estimated at 600*l*. Such has been the success of the undertaking, and so many the advantages, that it is said to be in contemplation to carry out the plan in St. George's parish by causing Artesian wells to be sunk in different localities, best calculated to contribute to the convenience of the parishioners.

MACHINISTS AND PATENTEES having machinery or mechanical implements which they may wish to have known, are requested to forward descriptions of them, either with or without engravings, and they will be inserted without charge, unless written too much in the style of an advertisement. We also call the attention of inventors to the advertisement of Mr. Donovan in another column. Any assistance we can render them will be cheerfully given.

NORRIS,
HAIR DRESSER & C.
No. 22 South Pearl Street.

CANCER.

WE, the subscribers, do certify that doctor P. Davidson of Albany sued doctor Alden March, professor of surgery in Albany, for slander in the first degree for asserting that doctor P. Davidson had killed a woman; doctor March strove to prove, by a number of physicians, that what he had said was true—doctor Davidson produced a host of witnesses, and ourselves amongst the number, and satisfied the jury and the audience of the unbounded success of his practice in curing cancers. The result of the trial was, doctor Davidson got a judgment against doctor March, in the supreme court, first day of July, 1842. We give it as our candid and firm belief that doctor Davidson's manner of treating cancers is altogether superior to the practice of doctors in general. We were subpœnaed to the supreme court to testify to the cures he had performed on us and others, and we do advise all who are afflicted with cancers to call on doctor Davidson in time and get cured.

JARED HOLT, breast.
JOSEPH WHELAN.
DAVID ARMAN, nose.
MARGARET EASTERLY, breast.
MALANA AVERY ROSE, cancer in the mouth and covered the lower part of her face.
PETER VHROMAN, on the knee and leg, very bad, and helpless for three years; regular doctors attended me to no effect, and wished to take my limb off above the knee.

Doctor Davidson was authorised by the law of the state to practice in 1809—the act is on file in the secretary's office.
Residence 44 Ferry street.

PATENT AGENCY.

THE UNDERSIGNED, for the last three years Examiner in the Patent Office of the United States, has established an agency at Washington City, to accommodate persons desirous of obtaining patents for improvements in the useful arts.

As it is important to Patentees that their business should be attended to with promptness and fidelity—their interests frequently suffering from the delays growing out of the return of their papers for amendment, when drawn up by themselves or persons not acquainted with the business—it is evident that a great advantage will be derived from the employment of a proper person in the first instance.

An experience of three years in the Patent Office, during which period hundreds of inventions have been examined by the undersigned, has fully qualified him, he thinks, to serve as a Patent Agent, with the greatest possible advantage to those who may favor him with their patronage, as from his acquaintance with the forms of the office and inventions already patented, he will be enabled, in drawing up the papers of applicants, to avoid whatever might delay or prevent the issuing of a patent. His experience will enable him also to furnish information to persons respecting the novelty of their inventions, before they are submitted to the office, so that they may avoid the expense attending unfavorable applications for patents.

In every thing relating to his profession, embracing the application of chimistry to the arts, improvements in surgical instruments, &c., the undersigned will be able to render important assistance to inventors.

Having established agencies at London and Manchester, in England, he will be able to secure patents in that country, and prepare all the necessary papers with the greatest promptness and dispatch.

Inventors need in no case subject themselves to the expense of visiting Washington, as by forwarding to the Patent Office a model, where the invention is a machine—or a specimen, where it is a composition of matter—and sending a short description explanatory of its nature, &c. to the undersigned, all the necessary papers and drawings can be prepared and sent to the applicants for their signatures.

Models and papers can be forwarded to the Patent Office free of expense, by being delivered to the Collectors of the different ports. In the city of New York, the undersigned has an agent—M. Lee, 65 Maiden Lane—who will immediately forward by railroad all models and papers placed in his care for this purpose.

An Architect and Engineer, employed for the last four years as a Draftsman in the Patent Office, will attend to the execution of all the necessary drawings required by the undersigned in his business. Those who may prefer to draw up their own specifications, can have their drawings executed by him with the greatest accuracy and on the most reasonable terms.

Communications *postpaid*, addressed to the undersigned, will be immediately attended to. In all cases where information is required, a fee of five dollars must be enclosed.

T. W. DONOVAN.

To Builders and Contractors.

THE subscriber having purchased Caldwell and Cameron's Lock Establishment, is now prepared to execute orders on their improved plan, in all the variety of Door Locks now used in the best style of building. The utility of these locks will at once be apparent to any one who may examine them. The principal difficulties existing in almost every lock now in use, and so much complained of by builders and house owners, in almost entirely removed. The simple but substantial application of the spring greatly lessens friction, and consequently lessens and tendancy to wear. There is no liability in any of its movements, to get out of order, and any number of them may be applied with perfect ease and security to doors of various thickness, without the usual alterations, trouble and expense, that generally attend the putting on of locks, as is best known to the experienced builder. Their utility has been thoroughly tested by experienced men, for the last two years, with entire satisfaction, and are considered by all who have used them, equal and in many respects superior to any other kind of lock now in the American market.

All orders addressed to the subscriber, at the Furnace, Fonda street, will receive prompt attention.

ROB'T L. CUNNINGHAM.

Schenectady, Nov. 26, 1841.

Reference may be had to any of the undersigned gentlemen who have given their approving card for publication.

We, the undersigned builders, have used Caldwell and Cameron's patent door locks, and from their simple construction, cheapness and general utility, do not hesitate to recommend them to the public, as equal to any lock of American manufacture now in use.

BOARDMAN & VAN VOAST,
GEORGE McBAIN,
HENRY MORSE, *Builders in Albany*
JOSEPH HORSFALL,
JOHN KELLY,
CORNELIUS THOMPSON,
ELIAS LYON, *Builders in Schenectady.*

I have during the past year, put on a number of Caldwell and Cameron's patent mortice and knob locks, and consider them the easiest to put on, and the best working lock I have ever used or seen. 37 JOHN RAYSIDE, Albany.

LEATHER, OIL, AND FINDING STORE,

No. 18 Hudson Street.

J. HOCHSTRASSER,

Will continue the above business at his old stand, and having made arrangements with manufacturers of Leather and Morocco in the cities of NEW-YORK, PHILADELPHIA, and ALBANY, and having in his employ first rate workmen, he is enabled to supply his customers with all the articles in his line on the most reasonable terms, at *Wholesale* or *Retail*, the following are included in his assortment: Oak and Hemlock Harness, Bridle, Collar, Horse, Trunk, Valise and Skirting Leather; Hog Skins, Philadelphia Russet Bridle, do. Facing Skins, do. Lining Hides, do. Top Hides, Patent Leather, Couch Roans, Neats Foot and Liver Oil, Currier's Tools, Oak Sole Leather, Hemlock do., Wax and Grain Upper Leather, do. Calf Skins, Keen's Philadelphia do., Seal and Kip Skins, Splits and Welt Leather, Cordovan, Red, Green, White and Yellow Linings, Goat and Sheep Binding Skins, White Alum Dressed Linings, Dressed and Undressed Morocco, Colored Goat and Sheep Skins, English Shoe Thread of all numbers, India Rubber and Patent Cloth, Apron Skins, Stock Binding, &c.

N. B. An assortment of SHOE MAKER'S FINDINGS will be kept on hand.

Also, *Roller Skins, Engine Hose, Band, Picker, String,* and *Patent Leather*, on hand and made to order. *Albany*, 1841.